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FOR

EYE'S OPTICAL CHARACTERISTIC MEASURING SYSTEM

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EYE'S OPTICAL CHARACTERISTIC MEASURING SYSTEM

BACKGROUND OF THE INVENTION

The present invention relates to an eye's optical characteristic measuring system for measuring an optical characteristic of an ocular optical system by measuring a light amount intensity distribution on an index image, which is projected to an ocular fundus of an eye under testing.

In the past, an eye's optical characteristic measuring system has been known. In this conventional type system, an index image such as a pinhole image is projected to a fundus of an eye under testing, and the index image is formed on a photoelectric detector according to a reflected light beam. Based on a light amount intensity distribution characteristic of the index image, a point image light amount intensity distribution function to indicate an optical characteristic of the ocular optical system is determined.

In this eye's optical characteristic measuring system, the light amount intensity distribution of the target image formed by a light beam passing through the optical system of the eye is directly measured, and the eye's optical characteristic of the eye under testing can be accurately measured. The target image formed on the fundus of the eye under testing can also be obtained by calculation as a simulation image. The eye's optical characteristic obtained by the eye's optical characteristic measuring system can be utilized as an information useful for an ophthalmological treatment or for a correction of visual

acuity.

Also, Currently, a new surgical operation on a cornea using a laser beam to correct visual acuity is being emerged. In this operation, shape of the surface of the cornea itself is processed by the laser beam. Accordingly, for the purpose of performing a preoperative measurement and a postoperative evaluation to determine the amount of this processing, it is necessary to accurately determine the eye's optical characteristic in different regions on a pupil.

However, in the conventional type system as described above, the measurement is made by using the light beam with a certain fixed aperture on the pupil of the eye under testing, and the measurement can be made only on the eye's optical characteristic for a certain fixed pupil diameter, and it is disadvantageous in that the eye's optical characteristic in different regions on the pupil cannot be obtained.

SUMMARY OF THE INVENTION

It is an object of the present invention to overcome the disadvantages of the conventional type eye's optical characteristic measuring system as described above, and to provide an eye's optical characteristic measuring system, by which it is possible to determine a distribution of an eye's optical characteristic on different regions on a pupil and over the total region on the pupil.

To attain the above object, the eye's optical characteristic measuring system according to the present invention comprises an aperture diaphragm arranged at a